REMARKS

Claims 29, 33, and 41-44 are cancelled herein. Claims 28, 31, 35, 36, 38, and 39 have been amended herein, and new claims 45-49 have been added herein. The detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented in the foregoing section above, with an appropriate defined status identifier for each claim. Applicants respectfully request the Examiner to exercise his discretion and enter the above claim amendments, as such amendments place the claims in better form for consideration on appeal. Upon entry of the amendments herein, claims 28, 30, 31, 35-40, and 45-49 are pending in this application. The claim amendments herein do not contain new matter.

The amendment to claim 28 clarifies what Applicants regard as the invention. Specifically, the amendment to claim 28(b) reciting a polypeptide that "inhibits phospholipase activity" is supported throughout the specification, such as on page 3, lines 16-17 ("the present invention relates to a novel **phospholipase inhibitor**..."). Additionally, the amendment to claim 28(c) reciting "an epitope" comprising at least 10 contiguous amino acids of SEQ ID NO: 2 is supported throughout the specification, such as on page 29, lines 1-3 ("...antibodies reactive to two non-interfering **epitopes** on GIPL is preferred...").

The amendment to claims 28 and 39 corrects improper antecedent basis.

The amendment to claims 35 and 38 clarifies what Applicants regard as the invention. Additionally, the amendment recites claims 35 and 38 in independent form, and incorporates the limitations of claim 28.

New claim 45, reciting a polypeptide comprising an amino acid sequence having at least 95% sequence identity to SEQ ID NO: 2, wherein said polypeptide inhibits phospholipase activity," is supported throughout the specification, such as on page 12, lines 22-24 ("a most preferred GIPL variant is one having at least **95%** sequence similarity to the GIPL amino acid

sequence (SEQ ID NO: 2)") and page 3, lines 16-17 ("the present invention relates to a novel **phospholipase inhibitor**...").

New claim 46, reciting the antibody of claim 28 further comprising a reporter molecule, is supported throughout the specification, such as on page 28, lines 23-24 ("...antibodies will be labeled by joining them... with a **reporter molecule**").

New claim 47, reciting a diagnostic test involving the antibody of claim 28, is supported throughout the specification, such as on page 28, lines 19-23 ("...antibodies are useful for the diagnosis of conditions or diseases characterized by expression of GIPL..."). New claim 47 recites canceled claim 29 in independent form, and incorporates the limitations of claim 28. Additionally, new claim 47 recites the following conditions or diseases associated with the expression of GIPL: viral infection, bacterial infection, fungal infection, autoimmune response, hereditary condition, cancerous condition, glomerulonephiritis, pregnancy, rheumatoid arthritis, osteoarthritis, scleroderma, insect bite or sting, and snake bite or sting. Support for such recitation can be found throughout the specification, such as on page 25, lines 25-30 ("some of the conditions in which the moderation of phospholipase expression may be important include **viral, bacterial or fungal infections** including septic and toxic shock and gangrene; **autoimmune responses** encompassing but not limited to anemias, asthma, systemic lupus, and myasthenia gravis; **hereditary or cancerous conditions** such as Alzheimer's, breast carcinoma, diabetes mellitus, osteoporosis, and schizophrenia; **glomerulonephiritis**; **pregnancy**; **rheumatoid and osteoarthritis**; **scleroderma**; and **insect or snake bites or stings** in which phospholipases are a component of the injected venom").

New claim 48, reciting a method for detecting a polypeptide comprising SEQ ID NO: 2 by utilizing the antibody of claim 28, is supported throughout the specification, such as on page 28, lines 21-22 ("...methods utilizing the antibody and a label to detect GIPL in human body fluids or extracts of cells or tissues"). New claim 48 recites canceled claim 43 in independent form, and incorporates the limitations of claim 28.

New claim 49, reciting a method for purifying a polypeptide comprising SEQ ID NO: 2 by utilizing the antibody of claim 28, is supported throughout the specification, such as on page 46, lines 16-25 ("native or recombinant **GIPL can be purified by** immunoaffinity chromatography using **antibodies specific for GIPL**"). New claim 49 recites canceled claim 44 in independent form, and incorporates the limitations of claim 28.

For the reasons provided above, the claim amendments herein do not contain new matter. Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the arguments that follow.

ARGUMENTS

Applicants kindly thank Examiner Murphy for the telephonic interview of June 8, 2004. During the telephonic interview, Examiner Murphy indicated rejoining claims 29, 43, and 44 upon allowance of claim 28. Accordingly, withdrawn claims 29, 43, and 44 have been canceled and newly presented claims 47-49, which recite the subject matter of claims 29, 43, and 44, respectively, in independent form, have been added.

35 U.S.C. § 112, first paragraph- Scope of Enablement

Claims 28, 30, 31, 33, and 35-42 are rejected under 35 U.S.C. § 112, first paragraph for alleged lack of enablement. The Patent Office admits that the specification is enabling for an antibody which binds SEQ ID NO: 2; however, the Patent Office alleges that the specification does not reasonably provide enablement for an antibody which binds a naturally-occurring amino acid sequence which is 90% identical to SEQ ID NO: 2, or a naturally-occurring amino acid sequence which is 90% identical to SEQ ID NO: 2 and further comprises a biologically active fragment or immunogenic fragment of SEQ ID NO: 2. The Patent Office alleges that it "would require undue experimentation for one of skill in the art to make and use the claimed antibodies." Applicants respectfully disagree for the reasons provided below.

A. The Claims Recite Sufficient Structural Characteristics of GIPL Polypeptide

Specifically, the Patent Office alleges that claims 28, 30, 31, 33, and 35-42 are overly broad, and "insufficient guidance is provided as to which of the myriad of variant antigenic polypeptides encompassed by the claims will retain the characteristics of the GIPL polypeptide" [Official Action, page 3, paragraph 1]. Applicants point out that the present claims are directed to antibodies and not to proteins; thus, functional characteristics of the GIPL polypeptide bears no relevance to the ability of the presently claimed antibodies to specifically bind to GIPL polypeptide, an amino acid sequence having at least 90% sequence identity to GIPL polypeptide,

or an epitope of at least 10 contiguous amino acids of GIPL polypeptide. As amended herein, claim 28 recites sufficient structural characteristics of GIPL polypeptides so as to enable one of skill to make the claimed antibodies. Moreover, the specification provides a plentitude of exemplary guidance on how to make and select for the recited binding specificity of the presently claimed antibodies. See, for example, page 46, line 25- page 47, line 5, which describes selection of antibodies which bind ^{125}I-labeled GIPL. Therefore, contrary to the Patent Office's allegations, the present claims and specification provide sufficient guidance to enable one of skill to make and use the full scope of the presently claimed antibodies.

B. The Specification Provides Sufficient Guidance for a Person of Ordinary Skill in the Art to Make and Use the Claimed Antibodies

In addition, the Patent Office also alleges that predicting a polypeptide's structure from sequence data is "limited", and predicting which amino acids can be substituted is "extremely complex and outside the realm of routine experimentation" [Official Action, page 4, paragraph 1]. The Patent Office further alleges that "it is unpredictable as to which variations, if any, meet the limitations of the claims" [Official Action, page 4, paragraph 1]. Applicants respectfully disagree with the notion that selecting antibodies which specifically bind a designated polypeptide or designated variant thereof is beyond the scope of routine experimentation. Applicants highlight the Patent Office's own admission:

> ...the skilled artisan would have to first make polypeptide variants of SEQ ID NO: 2 , or immunogenic fragments thereof, then test for the ability to produce antibodies specific for SEQ ID NO: 2 [Official Action, page 4, paragraph 2].

Applicants submit that producing polypeptides of SEQ ID NO: 2, or immunogenic fragments thereof, followed by selecting antibodies which bind such peptides, while tedious, is well within the scope of routine experimentation for one of ordinary skill in the art. Moreover, the specification provides exemplary guidance and numerous references on how to conduct such routine procedures; see for example, page 45, lines 4-15, which describes production of GIPL polypeptides; and page 46, line 25- page 47, line 5, which describes selection of antibodies which

bind ^{125}I-labeled GIPL. Therefore, contrary to the Patent Office's allegations, the present claims and specification enable one of skill to make and use the full scope of the presently claimed antibodies without undue experimentation.

The Patent Office asserts that "the claims as written do not set forth a functional limitation for polypeptides encompassed by the claims to which the antibodies are directed" [Official Action, page 3, paragraph 3]. Since the present claims are directed to antibodies and not to proteins, Applicants submit that the claims as presently recited are fully enabled, and functional limitations to the polypeptides do not bear any relevance to the ability of the claimed antibodies to specifically bind to the GIPL polypeptides. However, in the interest of compact prosecution, claim 28 is amended herein to include recitation of antibodies that bind a polypeptide comprising an amino acid sequence having at least 90% sequence identity to SEQ ID NO: 2, *wherein said polypeptide inhibits phospholipase activity.*

35 U.S.C. § 112, first paragraph- Written Description

Claims 28, 30, 31, 33, and 35-42 are rejected under 35 U.S.C. § 112, first paragraph for alleged lack of written description. Applicants respectfully disagree for the reasons provided below.

A. The Claims Recite Distinguishing Attributes of the Claimed Invention

The Patent Office alleges that the specification and claims "do not indicate what distinguishing attributes (are) shared by the members of the genus" claims [Official Action, page 5, paragraph 2]. Applicants note that the present claims are drawn to isolated antibodies that specifically bind to polypeptides comprising SEQ ID NO: 2, an epitope of at least 10 contiguous amino acids of SEQ ID NO: 2, or a polypeptide having an amino acid sequence of at least 80% sequence identity to SEQ ID NO: 2, wherein said polypeptide inhibits phospholipase activity. Contrary to the Patent Office's allegation, the present claims do recite distinguishing attributes of

the claimed invention. One such exemplary common attribute of the claimed antibodies is their ability to specifically bind to polypeptides comprising SEQ ID NO: 2.

B. The Specification Provides Sufficient Guidance

The Patent Office further alleges that the specification and claims "do not provide any guidance as to what (amino acid) changes should be made" [Official Action, page 5, paragraph 2]. Applicants submit that the specification and present claims provide sufficient guidance to one of skill on how to make and use the presently claimed antibodies. For example, the specification at page 45, lines 4-15 describes production of GIPL polypeptides; and at page 46, line 25- page 47, line 5, the specification describes selection of antibodies which bind ^{125}I-labeled GIPL. Moreover, independent claim 28 explicitly recites that the claimed antibodies specifically bind to polypeptides comprising SEQ ID NO: 2, an epitope of at least 10 contiguous amino acids of SEQ ID NO: 2, or a polypeptide having an amino acid sequence of at least 80% sequence identity to SEQ ID NO: 2, wherein said polypeptide inhibits phospholipase activity. Therefore, contrary to the Patent Office's allegation, the present claims and specification provide sufficient guidance regarding the binding specificity of claimed antibodies.

C. The Specification Sufficiently Describes a Polypeptide of SEQ ID NO: 2

The Patent Office also alleges that the polypeptide of SEQ ID NO: 2 is insufficient to describe the presently claimed invention [Official Action, page 5, paragraph 2- page 6, paragraph 1]. Applicants assert that the amino acid sequence of SEQ ID NO: 2 provides sufficient guidance as to enable one of skill to make and use the claimed antibodies. Applicants note the following statement cited by the Examiner from the PTO's Written Description Guidelines:

> Therefore, as long as an applicant has disclosed a "fully characterized antigen," either by its structure, **formula, chemical name,** or **physical properties**... the applicant can then claim an antibody by its binding affinity to that described antigen [Official Action, page 7, paragraph 1; emphasis added in bold].

As required by the Patent Office, Applicants have claimed invention antibodies by describing the antigen, GIPL and variants thereof, by formula (*e.g.* SEQ ID NO: 2), by chemical name (*e.g.* GIPL), *and* by physical properties (*i.e.* phopholipase inhibitor). Therefore, contrary to the Patent Office's allegation, the present claims and specification provide sufficient written description of the claimed antibodies.

Furthermore, the Patent Office alleges that "the specification does not provide sufficient support for the claims to the antibody that binds an immunogenic fragment, or which bind a naturally occurring variant 90% identical to SEQ ID NO: 2 because the specification fails to disclose the structural elements of antibody or antigen" [Official Action, page 7, paragraph 1]. Applicants emphasize that the present claims are directed to antibodies and not to proteins. The claims, as presently recited, explicitly describe the amino acid sequences specifically recognized by the claimed antibodies. Functional limitations to the polypeptides do not bear any relevance to the ability of the claimed antibodies to specifically bind to the GIPL amino acid sequences. However, in the interest of compact prosecution, claim 28 is amended herein to include recitation of antibodies that bind a polypeptide comprising an amino acid sequence having at least 90% sequence identity to SEQ ID NO: 2, *wherein said polypeptide inhibits phospholipase activity.*

For the reasons provided above, withdrawal of the rejection of claims 28, 30, 31, 33, and 35-42 under 35 U.S.C. § 112, first paragraph is respectfully requested.

CONCLUSION

In light of the amendments and arguments provided herein, Applicants believe that the present application is now in condition for allowance. Entry of the claims as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-0872. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-0872.

Respectfully submitted,

Date June 15, 2004

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